What's Wrong with the Problem of Unconceived Alternatives?

Kyle Stanford (2006) argues that the most serious and powerful challenge to scientific realism has been neglected. The problem of unconceived alternatives (PUA), as he calls it, holds that throughout history scientists have failed to conceive alternative theories roughly equally well-confirmed (by the available evidence) to the theories of the day and, crucially, that such alternatives eventually were conceived and adopted by some section of the scientific community. PUA is a version of the argument from the underdetermination of theories by evidence (UTE) but departs from it in two significant ways: (i) there is a shift from artificially produced rival theories - of the kind typically talked about in the underdetermination debate - to actual rivals and (ii) there is a shift from empirically equivalent rivals to rivals that are equally well-confirmed by the available evidence at a given point in time. In this talk I will argue that by these shifts Stanford successfully manages to find more historical evidence for PUA (than do proponents of UTE), but only at the expense of making his thesis ineffectual.

My argument that PUA does not present the scientific realist with a real challenge will consist of the following three objections:

(1) The main evidence offered for PUA, namely Darwin's pangenesis theory, Galton's stirp theory and Weismann's germ-plasm theory, is too small a sample to draw inductive inferences from about the history of science, let alone its future.

(2) The three aforementioned theories are primarily explanatory in nature with little to no empirical support. What is more, Stanford does not attempt to vet the quality of explanations. The only potentially impressive predictive accomplishment boils down to Weismann's prediction of reduction division. The prediction, i.e. germ cells receive half of the germinal material of the parent cell, fails to impress when compared to the staple of novel predictions one finds in physics, where theoretically calculated values approach the observed values to many decimal places. Moreover, the phenomenon was neither previously unknown, nor clearly unexpected.

(3) Although the three theories support PUA, they do so only because its demands on genuine rivals are so meagre. PUA's sole requirement is that rivals are roughly equally well confirmed by the available evidence. In a footnote, Stanford lowers the demands even further saying that strictly speaking alternatives should not be "*effectively ruled out by the [available] evidence*" (p.26, f10) [original emphasis]. Both requirements are simply too weak. Theories or theory parts can count as genuine rivals even if there is *no evidence available whatsoever*. Equally shocking is his use of this lack of evidence to thwart any objections about how easy it is "to judge that a given alternative was even roughly as well confirmed" (134). But to suggest that lack of evidence can convey (a) what counts as a genuine rival and (b) what counts as more or less roughly well confirmed is to reduce PUA to a lame duck. Or, to borrow one of Stanford's expressions, PUA becomes 'a pyrrhic victory' for the anti-realist.

References:
Stanford, K. (2006) *Exceeding Our Grasp*: *Science*, *History*, *and the Problem of Unconceived Alternatives*, Oxford: Oxford University Press.